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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,810	08/01/2003	Katsumi Kobayashi	Q76527	2013

7590 12/12/2005

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EXAMINER
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HABTE, KAHSAY

ART UNIT	PAPER NUMBER
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1624

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/631,810	KOBAYASHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kahsay Habte	1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. Claims 1-8 are pending in this application.

### *Response to Amendment*

2. Applicant's amendment filed 11/23/2005 in response to the previous Office Action (5/23/2005) is acknowledged. Rejection of claims 1-8 under 35 U.S.C. § 112, second paragraph (items 4a -4c) has been obviated. Upon further review of this case, it is deemed necessary to raise new issues that need further rejection.

### *Election/Restriction*

3. The claims are drawn to multiple inventions for reasons set forth in the restriction requirement. The claims are examined only to the extent that they read on the elected invention. Cancellation of the non-elected subject matter is recommended in response to this Office Action. Note that Group I is drawn to tetracyclic ring where Z<sub>2</sub> forms thiophene or furan and fused to a benzo ring. Claim 1 is drawn to Group I and Group III, since it recites, "condensed ring to form a tetracyclic ring system". The condensed ring of tetracyclic ring system can be formed when a benzo ring is fused to Z<sub>2</sub> = furan or thiophene (Group I) or a tetracyclic ring system can be formed when a heterocyclic ring other than furan or thiophene is fused to Z<sub>2</sub> = furan or thiophene (Group III). Note that Group III is composed of three heterocyclic rings and a benzo ring. Group I is composed of two benzo rings, a thiazole and furan ring or two benzo rings, a thiazole and thiophene ring. The core structure of Group I is different from the core structure of

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Group III. One skilled in the art would not consider a benzo fused furan or thiophene to be equivalent to a furan or thiophene ring that is fused to a heterocyclic ring.

Applicants have to delete the non-elected subject matter from claim 1. Please see formulae I-5, I-6, I-29 or I-30 on pages 33 and 35 for guidance.

### ***Response to arguments***

Applicant's argument filed 11/23/2005 has been fully considered but it is not persuasive.

Applicants argue: "if the Examiner finds one of the elected species in claim 1 to be allowable, then he should examine another species. Therefore, applicants submit that it is not necessary for applicants to amend claim 1 at the present time". The examiner disagrees with applicants. Applicants have elected Group I without traverse from the following three Groups.

- I. Claims 1-8 (in part), drawn to tetracyclic ring where  $Z_2$  forms thiophene or furan ring and  $V_2$  and  $V_3$  form a benzo ring (see formulae I-2 or I-5 on page 33), classified in class 548, subclass 149.
- II. Claims 1-8 (in part), drawn to tricyclic ring where  $Z_2$  forms thiophene or furan ring and  $V_2$  and  $V_3$  do not form a benzo ring, classified in class 548, subclass 151.

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- III. Claims 1-8 (in part), drawn to others (e.g. tetracyclic ring where  $V_2$  and  $V_3$  form a heterocyclic ring,  $Z_2$  = imidazole,  $Z_2$  = pyrrole,  $Z_2$  = isoxazole, isothiazole, etc), classified in classes 544, 546 and 548, subclass various.

As set forth in the restriction requirement, the restriction was made between these three groups. There was no election of species, thus, the examiner does not have to search all the inventions. Applicants have to limit their invention to tetracyclic ring in which furan or thiophene ring (i.e.  $Z_2$  – furan or thiophene or  $Z_4$  = O or S) condense with benzo ring to form a tetracyclic ring.

It is a standard procedure to ask applicants to elect a single disclosed species within a group. This is done, in case the case has to be transferred to appropriate art unit or in some case to initiate an initial search within a group. Applicants admit that they have elected a wrong compound II-51 that does not fall into the elected invention. However, the examiner did not raise an issue, since this case was not a subject of transfer from one art unit to the other. This is evidence that there were no election of species in the first place.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

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a. In claims 1, 3, 5-6 and 8, the phrases "mercapto group", "cyano group", "carboxyl group" etc. are not clear. What is covered and what is not? As recited, it appears that the term "group" indicates the presence of a substituent. For example, what is the difference between mercapto and just a mercapto? Is a cyano group different from just a cyano? There is no guidance in the specification that explains what said groups are.

b. In claim 1 or elsewhere in the claims, the phrase "phosphoric acid group" is not clear. Phosphoric acid ( $\text{H}_3\text{PO}_4$ ) is a molecule and not a moiety. Is "phosphoric acid group" a molecule or a moiety? If it is a moiety, how is it attached to the tetracyclic ring? Note that a "phosphonic acid" is disclosed at page 24 for the definition of V, V1, V3 or Z2 and "phosphoric acid group" is disclosed for the definition of V, but there is no guidance in the specification about phosphoric acid group.

### **Conclusion**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kahsay Habte whose telephone number is (571) 272-0667. The examiner can normally be reached on M-F (9.00AM- 5:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached at (571) 272-0661. The fax phone

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number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kahsay Habte  
Primary Examiner  
Art Unit 1624

December 7, 2005